

diagnosis model based on the extracted produced data feature includes generating the diagnosis model based on the extracted produced data information.

[0021] The preprocessing of the time-series data may include one of: selecting a part of the time-series data; generating one value or any combination of two or more values among a sum, an average, a median, a maximum, a minimum, a variance, a standard deviation, a number of outliers, a value equal to or greater than a reference value, and a value equal to or less than the reference value of the time-series data at predetermined time points; and extracting a part or a particular value of the time-series data at predetermined time periods.

[0022] The data feature may include a trend, a cycle, seasonality, and volatility.

[0023] The analysis model may include any one or any combination of two or more of a time varying coefficient model, an autoregressive conditional heteroskedasticity (ARCH) model, a generalized ARCH (GARCH) model, a stochastic volatility model, and a model combined with an autoregressive integrated moving average (ARIMA) model.

[0024] A non-transitory computer-readable medium may store program instructions that, when executed by a processor, cause the processor to perform the method.

[0025] Other features and aspects will be apparent from the following detailed description, the drawings, and the claims.

BRIEF DESCRIPTION OF THE DRAWINGS

[0026] FIG. 1 is a block diagram showing a configuration of a system for generating a diagnosis model, according to an embodiment.

[0027] FIG. 2 is a graph showing an example of time-series data including observed activity amount values of a particular individual acquired by an actigraphy sensor.

[0028] FIG. 3 is a graph showing an example of time-series data including observed blood glucose values of a particular individual acquired by a blood glucose measurement device.

[0029] FIG. 4 is a block diagram showing a configuration of a system for generating a diagnosis model, according to another embodiment.

[0030] FIG. 5 is a block diagram showing a configuration of a system for generating a diagnosis model, according to another embodiment.

[0031] FIG. 6 is a block diagram showing a configuration of a system for generating a diagnosis model, according to yet another embodiment.

[0032] FIG. 7 is a flowchart showing operations of a method of generating a diagnosis model, according to an embodiment.

[0033] FIG. 8 is a flowchart showing operations of a method of generating a diagnosis model, according to another embodiment.

[0034] FIG. 9 is a flowchart showing operations of a method of generating a diagnosis model, according to another embodiment.

[0035] FIG. 10 is a flowchart showing operations of a method of generating a diagnosis model, according to another embodiment.

[0036] Throughout the drawings and the detailed description, the same reference numerals refer to the same elements. The drawings may not be to scale, and the relative

size, proportions, and depiction of elements in the drawings may be exaggerated for clarity, illustration, and convenience.

DETAILED DESCRIPTION

[0037] The following detailed description is provided to assist the reader in gaining a comprehensive understanding of the methods, apparatuses, and/or systems described herein. However, various changes, modifications, and equivalents of the methods, apparatuses, and/or systems described herein will be apparent after an understanding of the disclosure of this application. For example, the sequences of operations described herein are merely examples, and are not limited to those set forth herein, but may be changed as will be apparent after an understanding of the disclosure of this application, with the exception of operations necessarily occurring in a certain order. Also, descriptions of features that are known in the art may be omitted for increased clarity and conciseness.

[0038] The features described herein may be embodied in different forms, and are not to be construed as being limited to the examples described herein. Rather, the examples described herein have been provided merely to illustrate some of the many possible ways of implementing the methods, apparatuses, and/or systems described herein that will be apparent after an understanding of the disclosure of this application.

[0039] As used herein, the term “and/or” includes any one and any combination of any two or more of the associated listed items.

[0040] Although terms such as “first,” “second,” and “third” may be used herein to describe various members, components, regions, layers, or sections, these members, components, regions, layers, or sections are not to be limited by these terms. Rather, these terms are only used to distinguish one member, component, region, layer, or section from another member, component, region, layer, or section. Thus, a first member, component, region, layer, or section referred to in examples described herein may also be referred to as a second member, component, region, layer, or section without departing from the teachings of the examples.

[0041] The terminology used herein is for describing various examples only, and is not to be used to limit the disclosure. The articles “a,” “an,” and “the” are intended to include the plural forms as well, unless the context clearly indicates otherwise. The terms “comprises,” “includes,” and “has” specify the presence of stated features, numbers, operations, members, elements, and/or combinations thereof, but do not preclude the presence or addition of one or more other features, numbers, operations, members, elements, and/or combinations thereof.

[0042] In general, time-series data refers to data including values which have been observed or detected in chronological order, and various time-series analysis techniques for finding regularity shown over time by analyzing time-series data are known. Time-series analysis techniques are used to analyze time-oriented data or estimate future values of time-series data.

[0043] For example, time-series analysis techniques include an autoregressive (AR) model, a moving average (MA) model, an autoregressive moving average (ARMA) model, an autoregressive integrated moving average model (ARIMA) model, seasonal ARIMA models, stochastic vola-